



Fluke 744 Documenting Process Calibrator-HART

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Data Sheet

Measurement Accuracy	
Voltage DC	110.000 mV 0.025%+0.015% * 1.10000 V 0.025%+0.005% * 11.0000 V 0.025%+0.005% * 110.000 V 0.05%+0.005% * 300.00 V 0.05%+0.005% *
Voltage AC	20 to 40 Hz 2% + 10 40 to 500 Hz 0.5% + 5 500 to 1 kHz 2% + 10 1 kHz to 5 kHz 10% + 20 Ranges: 1.1000, 11.000, 110.00, 300V
Current DC	30.000 mA 0.01% + 0.015% * 110.00 mA 0.01% + 0.015% *
Resistance	11.000 Ω 0.05% + 50 mΩ 110.00 Ω 0.05% + 50 mΩ 1.1000 kΩ 0.05% + 500 mΩ 11.000 kΩ 0.1% + 10 Ω
Frequency	1.00 to 109.99 Hz 0.05 Hz 110.0 to 1099.9 Hz 0.5 Hz 1.100 to 10.999 kHz 5 Hz 11.00 to 50.00 kHz 50 Hz
Pressure	Accuracy from 0.025% of range using any of 29 pressure modules. Modules available for differential, gage, vacuum, absolute, dual and high pressure. (for detailed specifications refer to pressure modules in options and accessories)
Note	* (% of reading + % of full scale)

Source Accuracy	
Voltage DC	110.000 mV 0.01%+0.005% * 1.10000 V 0.01%+0.005% * 15.0000 V 0.01%+0.005% *
Current DC	22.000 mA (Source) 0.01%+ 0.015% * 22.000 mA (Simulate) 0.02% + 0.03% *
Resistance	11.000 Ω 0.01% + 20 mΩ 110.00 Ω 0.01% + 40 mΩ 1.1000 kΩ 0.02% + 500 mΩ 11.000 kΩ 0.03% + 5Ω
Frequency	0.00 to 10.99 Hz 0.01 Hz 11.00 to 109.99 Hz 0.1 Hz 110.0 to 1099.9 Hz 0.1 Hz 1100 to 21999 Hz 2 Hz 22.000 to 50.000 kHz 5 Hz
Note	* (% of reading + % of full scale)

RTDs and Thermocouples	
Measure Accuracy:	10 Ω Cu (427): 2 °C 100 Ω Pt (3916): 0.3 °C 100 Ω Pt 0.3 °C

	(3926): 100 Ω Pt (385): 0.3 °C 200 Ω Pt (385): 0.3 °C 500 Ω Pt (385): 0.3 °C 1000 Ω Pt 0.3 °C (385): 120 Ω Ni (672): 0.3 °C note: For 2-and 3-wire measurement, add 0.4°C E: 0.3 °C N: 0.5 °C J: 0.3 °C L: 0.3 °C K: 0.3 °C T: 0.3 °C U: 0.3 °C B: 0.9 °C R: 1.0 °C S: 0.9 °C C: 0.6 °C BP: 1.2 °C XK: 0.4 °C note: Accuracy with external cold junction, for internal junction add 0.2 °C
Source Accuracy:	10 Ω Cu (427): 1 °C 100 Ω Pt 0.1 °C (3916): 100 Ω Pt 0.1 °C (3926): 100 Ω Pt (385): 0.1 °C 200 Ω Pt (385): 0.1 °C 500 Ω Pt (385): 0.1 °C 1000 Ω Pt 0.1 °C (385): 120 Ω Ni (672): 0.1 °C note: For 2-and 3-wire simulation, add 0.4 °C E: 0.2 °C N: 0.3 °C J: 0.2 °C L: 0.2 °C K: 0.3 °C T: 0.3 °C U: 0.3 °C B: 0.8 °C R: 0.9 °C S: 0.9 °C C: 0.6 °C BP: 0.5 °C XK: 0.4 °C note: Accuracy with external cold junction, for internal junction add 0.2 °C

Technical Data	
Data Log Functions	Measure functions: Voltage, current, resistance, frequency, temperature, pressure Reading rate: 1, 2, 5, 10, 20, 30, or 60 readings/minute Maximum record length: 8000 readings (7980 for 30 or 60 readings/minute)
Ramp Functions	Source functions: Voltage, current, resistance, frequency, temperature Rate: 4 steps/second Trip detect: Continuity or voltage (continuity detection not available when sourcing current)
Loop Power Function	Voltage: Selectable, 24 V or 28 V Accuracy: 5% Maximum current: 22 mA, short circuit protected Maximum input voltage: 30 V DC
Step Functions	Source Functions Voltage, current, resistance, frequency, temperature Manual Step Selectable step, change with arrow buttons

Autostep

Fully programmable for function, start delay, stepvalue, time per step, repeat

Environmental Specifications

Operating temperature	-10 °C to +50 °C -20 °C to +50 °C *
Storage temperature	-20 °C to +60 °C
Dust/water resistance	Meets IP52, IEC 529
Operating Altitude	2800 m
Note	* Except frequency and AC

Safety Specifications

Agency Approvals	CAN/CSA C22.2 No 1010.1-92, ASNI/ISA S82.01-1994, UL3111, and EN610-1:1993
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Mechanical & General Specifications

Size	130 x 236 x 61 mm (5.1" x 9.3" x 2.4")
Weight	1.4 kg (3 lbs., 1oz.)
Batteries	NiMH: 7.2V, 3.5 Ah
Battery life	>10 hours typical
Battery Replacement	Via snap-shut door without opening calibrator; no tools required
Side port connections	Pressure module connector RS-232 connector for PC interface cable and for HART communication cable Connection for optional battery eliminator
Data storage capacity	1 week of calibration results
90 day specifications	The standard specification interval for the 744 is 1 and 2 years. Typical 90 day measurement and source accuracy can be estimated by dividing the one year "% of reading" or "%of output" specifications by 2. Floor specifications, expressed as "% of full scale" or "counts" or "ohms" remain constant.